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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,925	09/26/2003	Alberto Salina	03CA23753407	9487

27975 7590 10/21/2005

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EXAMINER

OLSON, JASON C

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

✓  
10/672,925

Applicant(s)

SALINA ET AL.

Examiner

Jason C. Olson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2005.  
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-28 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

This office action is in regards to a response filed by the applicant on 8/23/05.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 8-23, and 25-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Kokami et al. (US 2003/0227707), hereafter Kokami.

Regarding claim 1, Kokami teaches a housing (see figure 1, it is interpreted by the examiner that the drive is contained in a housing); a rotatable data storage disk and associated disk drive motor carried by said housing for rotating said rotatable data storage disk (see figure 1, item 300 and 310); a movable arm and associated arm drive motor carried by said housing for moving said arm adjacent to said rotatable data storage disk (see figure 1, item 320 and 340); at least one read/write head carried by said arm (see figure 1, item HD); at least one capacitor connected to a power supply (see paragraph 32; a charge pump consists of capacitor to hold the charge); and a driving circuit for said arm drive motor (see paragraph 30, line 1-5) comprising at least one output stage connected to the power supply for driving said arm drive motor (see paragraph 30, figure 2, item 20 and VCC), and an auxiliary pulse width modulation (PWM) control circuit (see paragraph 34; it is interpreted by the examiner that the oscillator acts as a PWM modulator)

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connected to said at least one capacitor for driving said at least one output stage in a PWM mode after the power supply is switched off using charge stored in said at least one capacitor (see paragraph 32 and 37; the charge pump drives the retract control circuit when the power supply fails).

Regarding claim 2, Kokami teaches at least one output stage comprises a pair of half-bridge output stages; and wherein said auxiliary PWM control circuit drives one of said half-bridge output stages in the PWM mode after the power supply is switched off (see paragraph 47; it is interpreted by the examiner that when M8 and M9 are off, the output stage becomes a half-bridge).

Regarding claim 3, Kokami teaches at least one output stage comprises a primary output stage for driving said arm control motor when the power supply is switched on (see paragraph 30 and figure 2, item 120 and 123), and an auxiliary output stage connected to said auxiliary PWM control circuit for driving said arm control motor when the power supply is switched off (see paragraph 33; it is interpreted by the examiner that the retract circuit is an auxiliary output stage when the power is removed).

Regarding claim 4, Kokami teaches a primary output stage comprises a full -bridge output stage (see paragraph 30 and figure 2, item 120; the output stage is a full-bridge output when the power is on), and wherein said auxiliary output stage comprises a half -bridge output stage (see paragraph 47; when the power is off, the output stage become a half-bridge output).

Regarding claim 5, Kokami teaches an arm drive motor comprises a voice coil motor (VCM) (see paragraph 30, line 5).

Regarding claim 6, Kokami teaches a driving circuit further comprises a charge pump circuit connected between the power supply and said at least one capacitor (see paragraph 32 and figure 2, item 140; the charge pump consists of a capacitor to store a charge).

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Regarding claim 8, Kokami teaches auxiliary PWM control circuit drives said at least one output stage until said arm drive motor moves said movable arm to a parking position (see paragraph 62; it is interpreted by the examiner that the ramp is a parking position).

Regarding claim 9, Kokami teaches driving circuit comprises an integrated driving circuit (see paragraph 27, line 7-11).

Regarding claims 10-19: claims 10-19 have limitations similar to those treated in the above rejection(s), and are met by the references as discussed above. Claim 10 however also recites the following limitations as taught by Kokami: a power supply (see figure 2, VCC), a processor connected to the power supply (see figure 1, item 260; it is inherent to an artisan in the art that the processor is connected to power).

Regarding claims 20-23: claims 20-23 have limitations similar to those treated in the above rejection(s), and are met by the references as discussed above.

Regarding claims 25-28: method claims 25-28 are drawn to the method of using the corresponding apparatus claimed in claims 1-4. Therefore method claims 25-28 correspond to apparatus claims 1-7 and are rejected for the same reasons of anticipation (obviousness) as used above.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokami and Olesiewicz (US 6,744,628).

Regarding claim 7 and 24, Kokami teach all the limitations of the claims 1 and 20 above, but fails to teach a capacitor has a capacitance value of less than or equal to about 33 uF. However, Olesiewicz is relied upon to teach a capacitor with a capacitance of 33 uF (see col. 5, ln. 35 of Olesiewicz). It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the capacitor of Kokami by applying the teaching of a 33uF capacitor as taught by Olesiewicz for the purpose of reducing the weight of the booster.

#### *Response to Arguments*

Applicant's arguments filed 08/23/05 have been fully considered but they are not persuasive. The applicant argues that, "[T]he capacitor C1 is not the source of energy that drives the VCM to carry out retract operation when a power interruption to the integrated circuit occurs." However, Kokami teaches that a charge pump, see paragraph 32, receives energy from the BEMF of the spindle and outputs a boosted voltage to the at least retract control circuit, see paragraph 37. In this instant, the booster circuit, or charge pump, acts as a source of energy that drives the VCM to carry out retract operations when a power interruption occurs. The charge pump consists of a capacitor in order to store a charge.

*Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason C. Olson whose telephone number is (571)272-7560. The examiner can normally be reached on Monday thru Thursday 7:30-5:30; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Hudspeth can be reached on (571)272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCO

October 18, 2005

  
**DAVID HUDSPETH**  
**SUPERVISORY PATENT EXAMINER**  
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